UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,078	11/03/2000	David Forrest Squires	XXT-064	6149

7590 02/12/2004	EXAMINER

PATRICK R. ROCHE
FAY, SHARPE, FAGAN MINNICH & McKEE LLP
1100 SUPERIOR AVENUE
7TH FLOOR
CLEVELAND, OH 44114-2518

EXAMINER
MAURO JR, THOMAS J

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)	
Office Action Summary	09/706,078		SQUIRES ET AL.	
	Examiner		**Art Unit**	
	Thomas J. Mauro Jr.		2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2000*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date *8*.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-21 are pending. A formal action on the merits of claims 1-21 follows.

Specification

2.   The disclosure is objected to because of the following informalities:

- Page 6 line 1, workflow system "23" should be relabeled as -- 2 --.

- Page 7 line 15, phrase "... with letterhead and 500 pages of letterhead ..." should be corrected such that letterhead A & B (referenced in line 14 above) is distinguished, i.e. "... with letterhead A and 500 pages of letterhead B ..."

- Page 8 line 18, data parameter "90" should be relabeled as -- 82 --.

- Page 9 line 1, document processing job "114" should be relabeled as -- 94 --.

- Page 9 line 4 and Page 8 line 33, devices should include the reference number "114" as it is also listed as a device in the figure 10.

- Page 9 line 3, cell "98" should be relabeled as -- 100 --.

- Page 9 line 26, reference number "134" should be removed from the list of cells because it references a sub-job in figure 12, not a cell.

Appropriate correction is required.

Drawings

3.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **Figure 1, Reference number 2 – Workflow system.** A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: **Figure 8, Reference number '60 – Printing Workflow System.** A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5.   The drawings are objected to because **server computer in Figure 3 is mislabeled as "2" when it should be -- 20 --.** A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7.   Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Hansen (U.S.

6,509,974).

With respect to claim 1, Hansen teaches a printing workflow system disposed in a

network environment for coordinating production of document processing jobs among a plurality

of cells, wherein each cell is comprised of one of a plurality of devices and resources for

completing document processing jobs **[Hansen -- Abstract and Figures 1A and 1B]**, said

printing workflow system comprising:

a workflow mapping module that determines workflow for a selected one of said

document processing jobs **[Hansen -- Figures 1A and 1B and Col. 5 lines 59-67 – Col. 6 lines

1-2 – Servers 116 and 118 manage the flow of documents and their processing, i.e.

workflow, after being submitted by client 114]**;

a job decomposition module for splitting selected document processing job into sub-jobs

and for sending said sub-jobs to given ones of the cells for further processing **[Hansen -- Col. 20

lines 26-40 – Job allocator receives print requests and determines which preparation

station would best serve the given multi-document (compound) job, based on certain**

characteristics, i.e. whether it is a book body or cover, of the job and sends it to one of these

multiple stations, i.e. cells]; and

a product cell controller at a selected one of the given cells for receiving at least one sub-

job and for further splitting said sub-job into lots for processing among devices in said selected

cell [Hansen -- Col. 7 lines 30-42 and Col. 18 lines 11-32 – Print server at each preparation

station (Col. 7 lines 20-24) further breaks job up before sending job to specific output

device(s), i.e. printers, such as by whether the sub-job is for color or black and white].

With respect to claim 2, Hansen further teaches a cell assignment module for assigning

said sub-jobs to said given ones of the cells based on available capacity of each cell to process

the selected document processing job [Hansen -- Col. 20 lines 26-37 – Job allocator assigns

the jobs to multiple preparation stations using various criteria, one being the current

number of jobs in queue at a given stations, i.e. capacity].

With respect to claim 3, Hansen further teaches a storage device for holding information

regarding storing capacities and capabilities of said cells [Hansen -- Col. 5 lines 52-67 – Col. 6

lines 1-2, Col. 11 lines 26-30 and Col. 18 lines 35-48 – Resource allocator, located on server,

has access to information regarding capabilities and capacities of preparation stations, i.e.

cells. Therefore, that information is required to be stored on one of the servers in

memory].

With respect to claim 4, Hansen further teaches a storage device for storing information regarding workflow of each document processing job said workflow being comprised of a tree that outlines a sequence of operations needed to be performed to accomplish the selected document processing job **[Hansen -- Col. 5 lines 59-67 – Col. 6 lines 1-2 – Job preparation stations manage flow of jobs from start to finish which implies that all aspects of the job are known so that it can assign each step to the proper device so that the job can be properly completed]**.

With respect to claim 5, Hansen further teaches wherein each of said document processing jobs are comprised of a plurality of job data structures that hold information identifying tasks needed to be completed in order to complete the document processing job **[Hansen -- Col. 15 lines 61-67 – Col. 16 lines 1-36 – Tree data structure holds visual representation of the work that needs to be completed for a particular job to be completed]**.

With respect to claim 6, Hansen further teaches wherein said product cell controller module assigns a number of kanbans to associate with said selected document processing job **[Hansen -- Col. 4 lines 46-49 – Electronic job tickets are created for each job, specifying the instructions and tasks necessary for completing the job]**.

With respect to claim 7, Hansen further teaches wherein said product cell controller module adjusts the number of kanbans to further maximize utilization of the devices associated with said document processing job **[Hansen -- Col. 12 lines 4-7, lines 31-33 and lines 43-44 –**

Electronic job tickets, i.e. print tickets, exist independently of the job. If multiple output

devices are used, multiple tickets are generated by preparation station, which manages the

workflow. Tickets are adjusted based upon how many output devices will be used to

complete the given job].

With respect to claim 8, Hansen further teaches wherein said product cell controller

module stores the number of kanbans used by a selected one of the devices [Hansen -- Col. 4

lines 3-4 and lines 46-49 and Col. 12 lines 14-26 – Tickets are associated and stored with the

document job file. Each ticket contains various information and parameters of the job,

which would include how many copies or pages were distributed/to distribute to each

output device].

With respect to claims 9-16, these are method claims corresponding to the system

claimed in claims 1-8. They have similar limitations; therefore, claims 9-16 are rejected under

the same rationale.

With respect to claim 17, Hansen teaches a method for assigning sub-jobs to available

cells in a printing workflow system for coordinating document processing jobs, wherein each of

the available cells is comprised of at least one device for printing a product-type [Hansen --

Abstract and Figures 1A and 1B], the method comprising:

identifying maximum capacity of each of the available cells to print the product type

[**Hansen -- Col. 11 lines 26-30 and Col. 18 line 48 – Capabilities, including capacity of

devices, i.e. queues, are known by the workflow management software**];

identifying current loading of each of the available cells to print a product type [**Hansen -

- Col. 18 line 48 – In order for allocator to determine queue is too large, i.e. too many jobs

exist for that device, current loading information would need to be obtained by allocator**];

determining based on the maximum capacity and current loading of each of the available

cells a current capacity of each of the available cells to print the product-type [**Hansen -- Col. 18

lines 35-43 – Allocator knows capabilities, i.e. capacity of devices, and the current loading

or job queue information, therefore, allocator would inherently know available capacity of

the devices**]; and

assigning at least one of the available cells for printing the product type based on the

current capacity of each of the available cells [**Hansen -- Col. 18 lines 35-43 – Allocator knows

capabilities, i.e. capacity of devices, and the current loading or job queue information, upon

which, allocator chooses how to distribute or best produce a given page and assigns job to

that resource**].

With respect to claim 18, Hansen further teaches wherein the print workflow system

stores the maximum capacities of each of the available cells in the print workflow system

[**Hansen -- Col. 11 lines 26-30 and Col. 18 line 48 – Capabilities, including capacity of

devices, i.e. queues, are known by the workflow management software, which would

require these values be stored in memory**].

With respect to claim 19, Hansen further teaches a pull-type control policy for determining whether a cell can be assigned new document processing jobs **[Hansen -- Col. 7 lines 4-5 and lines 36-37 – Load balancing policies serve to maximize production of output devices by keeping all printers fully utilized]**.

With respect to claim 20, Hansen further teaches wherein the print workflow system updates the current loading of each available cells **[Hansen -- Col. 11 lines 26-30 and Col. 18 line 48 – Because allocator knows amount of jobs in queue, this would require that as jobs are allocated, the capacity of the queue be updated]**.

With respect to claim 21, Hansen further teaches wherein the print workflow system updates the maximum capacity **[Hansen -- Col. 11 lines 26-30 and Col. 17 lines 43-46 – In order for system to manage workflow properly, capacities and capabilities would be required to be updated as new capabilities become available or as time changes current capacities/capabilities on the devices, i.e. as more jobs are assigned to one device, queue becomes too large and exceeds maximum capacity]**.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Tan et al. (U.S. 5,978,560) discloses a method of load balancing printing jobs among

  various output devices based upon the capabilities of each device and the

  requirements of the job.

- Roberts et al. (U.S. 6,650,431) discloses a method for processing documents to

  multiple output devices based on characters of the jobs to be printed and the

  availability and capabilities of the resources.

- Smirnov et al. (U.S. 6,546,364) discloses a method for creating adaptive workflows in

  scheduling jobs to be printed by various devices.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Thomas J. Mauro Jr. whose telephone number is 703-605-1234.

The examiner can normally be reached on M-F 8:00a.m. - 4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David A. Wiley can be reached on 703-308-5221. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJM
February 6, 2004

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100